Justin P. Stachnik

Jet Propulsion Laboratory
4800 Oak Grove Drive
M/S 233-304
Pasadena, CA 91109
Tel: 818.354.8107, Fax: 818.354.3223
E-mail: Justin.P.Stachnik@jpl.nasa.gov

EDUCATION

Ph.D., Atmospheric Sciences 5/2013
Texas A&M University, College Station, TX
Dissertation: *Observed Characteristics of Clouds and Precipitating Systems Associated with the Tropical Circulation in Global Models and Reanalyses*
Advisor: Courtney Schumacher

M.S., Atmospheric Science 8/2007
Purdue University, West Lafayette, IN
Thesis: *Numerical Simulation and Microphysical Evaluation of a Severe Hailstorm using the Weather Research and Forecasting (WRF) Model*
Advisor: Sonia Lasher-Trapp

B.S., Honors Curriculum in Synoptic Meteorology 5/2005
Purdue University, West Lafayette, IN
Undergraduate Thesis: *An Investigation of Giant Aerosol Particle Variability over the Eastern Great Lakes Region and Implications for Aircraft Icing Forecasts*
Advisor: Sonia Lasher-Trapp

PROFESSIONAL EXPERIENCE

Postdoctoral Scholar 4/2013 – present
NASA Jet Propulsion Laboratory, Pasadena, CA
University of California, Los Angeles, CA

Graduate Research Assistant 8/2007 – 3/2013
Texas A&M University, College Station, TX

Graduate Research Assistant 8/2005 – 8/2007
Purdue University, West Lafayette, IN

Student Career Experience Program (SCEP) 5/2004 – 8/2007
National Weather Service WFO-LOT, Romeoville, IL

TEACHING EXPERIENCE (TEXAS A&M UNIVERSITY)

ATMO 201, Instructor, *Atmospheric Science* Fall 2012

ATMO 203, Instructor, *Weather Forecasting Lab* Fall 2011

ATMO 291/491, Graduate Assistant and Research Mentor, *Research* Fall 2007-Spr. 2010

ATMO 456, Graduate Assistant, *Practical Weather Forecasting* Spr. 2012

ATMO 251, Guest Lecturer, *Weather Observations and Analysis* Fall 2010

ATMO 352, Guest Lecturer, *Severe Weather & Mesoscale Forecasting* Spr. 2009–2013

ATMO 443, Guest Lecturer, *Radar Meteorology* Fall 2009–2010

SELECTED HONORS AND AWARDS

US Senator Phil Gramm Doctoral Fellowship, Texas A&M University Office of Graduate Studies, 2013

Outstanding Graduate Teaching Assistant, Texas A&M University Department of Atmospheric Sciences, 2012

Outstanding Poster Presentation, World Climate Research Programme (WCRP) Open Science Conference, 2011

Kenneth P. Pipes Endowed Fellowship in Geosciences, Texas A&M University College of Geosciences, 2009-2010

Climate Variability and Change Scholarship, American Meteorological Society, 2007

Charles C. Chappelle Fellowship, Purdue University Graduate School, 2005-2006

RESEARCH INTERESTS

Tropical meteorology	Multi-scale interactions	Cloud physics and dynamics
Mesoscale precipitating systems	Radar and satellite meteorology	Climate variability and change

PUBLICATIONS IN PREPARATION

Stachnik, J. P., C. Schumacher, and C.-L. Lappen, 2015: An observational decomposition and model reconstruction of clouds and precipitating systems associated with the Hadley circulation. To be submitted to *J. Atmos. Sci.* (in prep).

Stachnik, J. P., D. E. Waliser, A. J. Majda, S. N. Stechmann, and S. Thual, 2015: Sensitivities of the Madden-Julian oscillation to the strength and shape of the tropical warm pool in a low-dimension dynamic model. To be submitted to *J. Geophys. Res. Atmos.* (in prep).

Stachnik, J. P., D. E. Waliser, A. J. Majda, S. N. Stechmann, and S. Thual, 2015: Evaluating MJO initiation and decay in the skeleton model using an RMM-like index. To be submitted to *J. Geophys. Res. Atmos.* (in prep).

Stachnik, J. P., and C. Schumacher, 2015: Tropical and subtropical cloud regimes in the MERRA reanalysis using an ISCCP simulator. To be submitted to *J. Climate* (in prep).

PUBLICATIONS PUBLISHED OR IN PRESS

Stachnik, J. P., D. E. Waliser, and A. J. Majda, 2015: Precursor environmental conditions associated with the termination of Madden-Julian oscillation events. *J. Atmos. Sci.* (in press).

Li, J.-L. F., W.-L. Lee, D. E. Waliser, **J. P. Stachnik**, E. Fetzer, S. Wong, and Q. Yue, 2014: Characterizing tropical Pacific water vapor and radiative biases in CMIP5 GCMS: Observation-based analyses and a snow and radiation interaction sensitivity experiment. *J. Geophys. Res. Atmos.*, 119, 10981-10995, doi: 10.1002/2014JD021924.

Li, J.-L. F., W.-L. Lee, D. E. Waliser, J. D. Neelin, **J. P. Stachnik**, and T. Lee, 2014: Cloud-precipitation-radiation-dynamics interaction in global climate models: A snow and radiation interaction sensitivity experiment. *J. Geophys. Res. Atmos.*, 119, 3809-3824, doi:10.1029/2013JD021038.

Hopper, L. J., Jr., C. Schumacher, and **J. P. Stachnik,** 2013: Implementation and assessment of undergraduate learning experiences in SOAP: An atmospheric science research and education program. *J. Geosci. Educ.*, 61, 415-427.

Stachnik, J. P., C. Schumacher, and P. E. Ciesielski, 2013: Total heating characteristics of the ISCCP tropical and subtropical cloud regimes. *J. Climate*, 26, 7097-7116.

Stachnik, J. P., and C. Schumacher, 2011: A comparison of the Hadley circulation in modern reanalyses. *J. Geophys. Res.*, 116, D22102, doi:10.1029/2011JD016677.

Lasher-Trapp, S., and **J. P. Stachnik**, 2007: Giant and ultragiant aerosol particle variability over the eastern Great Lakes region. *J. Appl. Meteor. Climatol.*, 46, 651-659.

SEMINARS AND INVITED TALKS

"TBD". Workshop on Stochasticity and Organization of Tropical Convection, Banff International Research Station for Mathematical Innovation and Discovery (BIRS), Banff, Canada, April 2015.

"Preliminary Work Towards Evaluating MJO Initiation and Decay in the Skeleton Model (with Observations and Reanalysis)". ONR-MURI Workshop, Courant Institute, New York, NY, January 2014.

"Observed Characteristics of Clouds and Precipitating Systems Associated with the Tropical Circulation". Yuk Young Lunch Seminar, Caltech, Pasadena, CA, May 2013.

"Characterizing MJO Diabatic Heating by Cloud Regime". ONR-MURI Workshop, NASA Jet Propulsion Laboratory, Pasadena, CA, February 2013.

"Characterizing the Total Heating of Tropical and Subtropical Cloud Regimes and Implications for the Large-scale Circulation". NASA Jet Propulsion Laboratory, Pasadena, CA, November 2012.

SELECTED PAPERS AND PRESENTATIONS

indicates student advised by J.S*.**

Stachnik, J. P., D. E. Waliser, and A. J. Majda, 2014: Precursor environmental conditions associated with the termination of Madden-Julian oscillation events. *AGU 2014 Fall Meeting*, San Francisco, CA.

Li, J.-L. F., W.-L. Lee, D. Waliser, **J. P. Stachnik**, L. Tong, and E. J. Fetzer, 2014: Characterizing tropical Pacific radiative biases and their impacts on SSTs, upper ocean currents, and temperatures in CMIP5 GCMs. *11th Ann. Meeting. Asia Oceania Geos. Soc.*, Sapporo, Japan.

Li, J.-L. F., W.-L. Lee, D. Waliser, J. D. Neelin, **J. P. Stachnik**, and E. J. Fetzer, 2014: Cloud-precipitation-radiation-dynamics interaction in global climate models. *11th Ann. Meeting. Asia Oceania Geos. Soc.*, Sapporo, Japan.

Stachnik, J. P., D. E. Waliser, A. J. Majda, and S. N. Stechmann, 2014: Applications, sensitivities, and development of an RMM-like index for the MJO skeleton model. *31st AMS Conf. Hurricanes and Tropical Meteor.*, San Diego, CA.

Li, J.-L. F., **and coauthors**, 2014: Cloud-precipitation-radiation-dynamics interaction in global climate models: A snow and radiation interaction sensitivity experiment. *31st AMS Conf. Hurricanes and Tropical Meteor.*, San Diego, CA.

Stachnik, J. P., D. E. Waliser, A. J. Majda, and S. N. Stechmann, 2013: Preliminary work towards evaluating MJO initiation and decay in the skeleton model. *AGU 2013 Fall Meeting*, San Francisco, CA.

Li, J.-L. F., **and coauthors**, 2013: The impacts of cloud-radiation bias on circulations and temperatures simulations in CMIP5 and NCAR CESM sensitivity experiments. *AGU 2013 Fall Meeting*, San Francisco, CA.

Stachnik, J. P., C. Schumacher, and C.-L. Lappen, 2012: A mesoscale decomposition of the tropical Hadley cell. *30th AMS Conf. Hurricanes and Tropical Meteor.*, Ponte Vedra Beach, FL.

Stachnik, J. P., and C. Schumacher, 2011: Tropical and subtropical cloud regimes in reanalysis data using an ISCCP simulator. *World Climate Research Programme (WCRP) Open Sci. Conf.*, Denver, CO.

Stachnik, J. P., and C. Schumacher, 2010: Hadley cell variability and extremes in reanalysis data: Links to tropical and subtropical precipitating systems. *AGU 2010 Fall Meeting*, San Francisco, CA.

Schumacher, C., L. J. Hopper, Jr., and **J. Stachnik**, 2010: Vignettes on rain and atmospheric variability in southeast Texas*. Houston AMS Chapter Meeting*, Houston, TX.

Haines*, B., R. Husted*, **J. Stachnik**, and C. Schumacher, 2010: On the spatial variability of storm accumulations in southeast Texas. *9th AMS Ann. Student Conf.*, Atlanta, GA.

Fanning*, A., B. Haines*, **J. Stachnik**, and C. Schumacher, 2009: Does southeast Texas need an additional upper-air station? *8th AMS Ann. Student Conf.*, Phoenix, AZ.

Moore*, J., A. Fanning*, **J. Stachnik**, and C. Schumacher, 2008: Changes in mesoscale divergence structures based on storm evolution. *7th AMS Ann. Student Conf.*, New Orleans, LA.

Stachnik, J., and S. Lasher-Trapp, 2006: Hailstorm simulations using the Weather Research and Forecasting (WRF) model: Microphysical parameterization sensitivities and preliminary verification. *12th AMS Conf. on Cloud Physics*, Madison, WI.

Stachnik, J. P., and S. Lasher-Trapp, 2005: Giant aerosol particles and aircraft icing. *Proc. 2nd Ann. Midwest Extreme & Hazardous Wea. Conf.*, Champaign, IL.

Lasher-Trapp, S., S. Bereznicki, and **J. Stachnik**, 2004: Giant and ultragiant aerosol particles: Source of large supercooled drops in mixed-phase clouds? *Proc. 14th Int. Conf. on Clouds and Precipitation*, Bologna, Italy, 831-835.

FIELD PROGRAM EXPERIENCE

NSF/JAMSTEC Dynamics of the Madden-Julian Oscillation (DYNAMO)/Cooperative Indian Ocean Experiment on Intraseasonal Variability in the Year 2011 (CINDY2011), Maldives, 2011-2012

SERVICE AND SYNERGISTIC ACTIVITIES

Reviewer, *Climatic Change, Geophysical Research Letters*, *Journal of Applied Meteorology and Climatology*, *Journal of Geophysical Research*, *Monthly Weather Review, Quarterly Journal of the Royal Meteorological Society*

Judge, Outstanding Student Paper Awards, Atmospheric Science Section, AGU 2014 Fall Meeting

Recruitment Chair, Atmospheric Sciences Graduate Council, Texas A&M University Department of Atmospheric Sciences, 2008-2011

Strategic Plan Committee, Texas A&M University College of Geosciences, 2010

President, Atmospheric Sciences Graduate Council, Texas A&M University Department of Atmospheric Sciences, 2009-2010

Graduate Student Representative to Department Faculty, Texas A&M University 2009-2010, Purdue University 2006-2007

PROFESSIONAL DEVELOPMENT

Preparing for an Academic Career in the Geosciences, On the Cutting Edge, National Association of Geoscience Teachers, June 2012

First Day to Final Grade Learning Community, Center for Teaching Excellence, Texas A&M University, Summer 2010

PROFESSIONAL SOCIETY MEMBERSHIPS

American Meteorological Society, Member

American Geophysical Union, Member